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(71) Applicant(s)
Stevan Vjestica
10 Alba Place, Notting Hill, LONDON, W11 1LQ,
United Kingdom

(72) Inventor(s)
Stevan Vjestica

(74) Agent and/or Address for Service
Stevan Vjestica
10 Alba Place, Notting Hill, LONDON, W11 1LQ,
United Kingdom

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(56) Documents Cited
GB 2218493 A GB 2077395 A GB 1511831 A

(58) Field of Search
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(54) Tyre valve dust cap

(57) An inflatable tyre valve dust cap has a numerical display indicating the air pressure required for the tyre to which the valve and valve cap are fitted. The numerical display indicating the air pressure would be positioned on the top or on the side or on both surfaces. The number may be, embossed, stamped, punched, engraved, flush, raised, inlaid, in relief, sunken, screen printed, or imprinted, moulded, pressed or similar, depending upon the method of manufacture of the valve dust cap. It may also be made more legible by being in a different colour. The number on the side forms part of the grip required to fit the cap to the valve. Where the top of the cap contains or has positioned the number or any part of the number, then the number could be used to provide the means to depress the air release mechanism of the valve. A marking could be used to identify to which axle the cap belongs. Such marking or any part of a marking used to identify which axle the cap belongs to, or a marking or symbol providing the manufacturers name, or any other information, could also be used to provide the means to depress the air release mechanism of the valve.

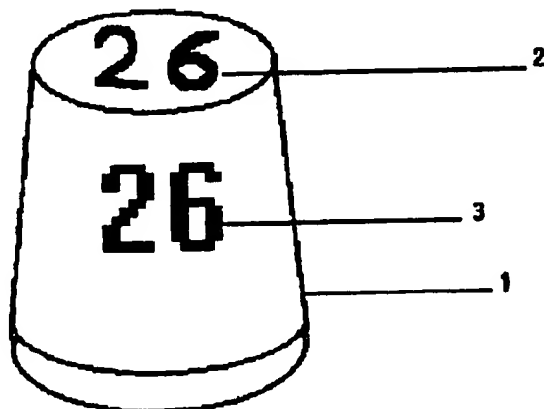


Figure 2

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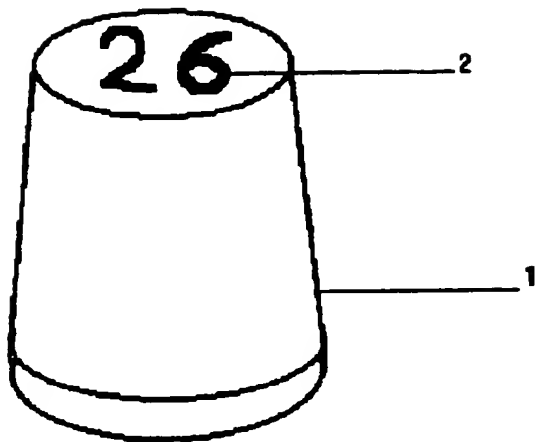


Figure 1

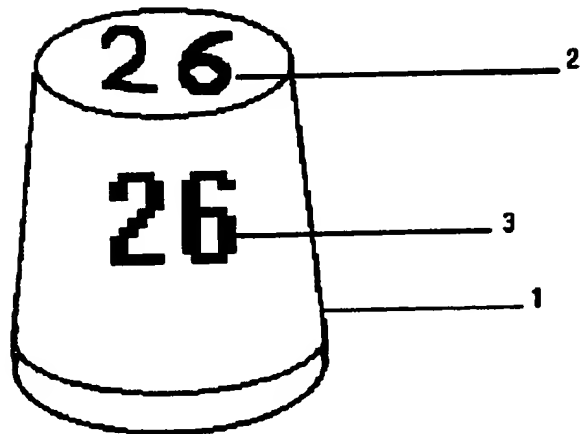


Figure 2

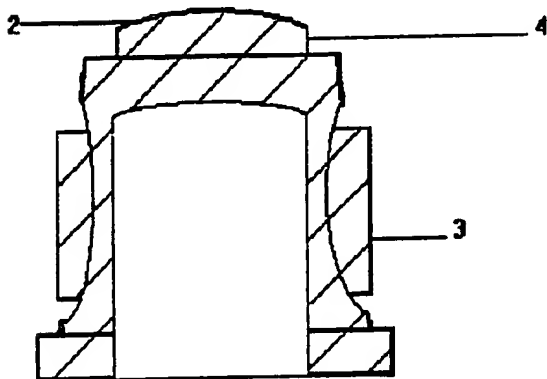


Figure 3

TYRE VALVE DUST CAP

This invention relates to an inflatable tyre valve dust cap.

Tyre valve dust caps are a well known product which are manufactured in a durable material with an internal thread that allows the cap to be fastened securely to the rest of the valve and are impervious. Its purpose is to protect the valve mechanism. By enclosing the exterior aperture of the valve, damage caused by dust, dirt, moisture and any foreign particle entering the valve and from accidental or wilful abuse causing the release of air if left exposed, is prevented. The dust cap has to be removed from the valve to enable the tyre pressure to be checked and for the tyre to be inflated if necessary. The outer surface of the dust cap is therefore usually grooved to provide the grip to enable the cap to be fitted or removed by hand.

Removal of the cap can often be awkward. In cold weather especially, the grooves provide insufficient grip to allow the dust cap to be removed by hand. Consequently pliers or similar tools are often used to unscrew the dust cap. The use of additional force in removing the dust cap can damage and sometimes crack the cap reducing its ability to protect the valve mechanism. Once the dust cap has been removed, the valve allows the tyre to be inflated or deflated, however the person carrying out the maintenance of the tyre pressure has to refer to the vehicle manual, tyre pressure chart or other reference for the correct tyre pressure. A problem frequently arises due to the necessary tyre pressure information not being readily available or listed for a particular make and model of vehicle. It is clearly inconvenient, and the consequences of inflating the tyre to the incorrect pressure reduce tyre and vehicle performance. Furthermore, if it necessary to reduce the tyre pressure, the air release mechanism of the valve is difficult to depress other than by using an object that is capable of depressing the mechanism. It has been known that objects such as matches and keys have been used for this task, which can damage the valve mechanism causing the valve to leak air.

It is an object of the present invention to provide an inflatable tyre valve dust cap which is economic to manufacture, and has an improved performance with regard to the problem of maintenance of the correct tyre pressure.

It is a further objective to provide an inflatable tyre valve dust cap where the present invention/number on the top of the cap may be used to provide the means required to depress the air release mechanism of the valve.

According to the present invention there is provided an inflatable tyre valve dust cap comprising/featuring of a numerical display indicating the air pressure for example in, but not restricted to, PSI (lb/sq in) or kg/sq cm required for the tyre to which the valve and valve cap be fitted.

The outward appearance of the tyre valve dust cap with number would have a functional as opposed to a mere aesthetic purpose. In order that the present invention may be more fully understood, examples will now be described by way of illustrations only with reference to the accompanying drawings, of which:

Figure 1 shows a perspective of a first embodiment of a tyre valve dust cap with the number positioned on the top surface of the cap according to the present invention. Figure 2 shows a second embodiment of the tyre valve dust cap with the number positioned on both the top and side surfaces of the cap. Figure 3 shows a cross-section of the tyre valve dust cap with the number positioned on both the top and side surfaces of the cap.

Referring now to Figure 1 of the drawings. An inflatable tyre valve dust cap is shown generally at 1. The cap comprises a number 2. The number is positioned at the top of the cap in the interests of maximum visibility. Figure 2 shows a second embodiment wherein the number 2 is positioned on the top of the cap and a further number 3 is positioned on the side of the cap. The purpose of this embodiment is to provide, in addition to the existing number 2, a further number 3 forming part or the whole of the grip and manufactured in such a way as to provide sufficient grip for ease of fitting or removal by hand. For example the number 3 may have a raised or recessed profile to form a part of the grip. The number 3 would also be clearly visible once the cap is removed. Figure 3 shows a cross-section of a third embodiment, where the number 2 on the top of the cap may be manufactured in such a way as to provide the means to depress the air release mechanism of the valve in addition to showing the correct air pressure required in the tyre to which it is fitted. For example the top of the cap maybe formed with a raised portion which may be in the form of a projecting island on which the number 2 is presented, or in the form of a raised profile of the number 2. In use, when the cap has been unscrewed from the valve, the cap can be inverted and the raised portion 4 inserted into the open end of the valve tube to depress the air release mechanism. A cross-section is also shown of the number 3 used as both grip and display.

CLAIMS

- 1 An inflatable tyre valve dust cap comprising/featuring of a numerical display indicating the air pressure for example in, but not restricted to, PSI (lb/sq in) or kg/sq cm required for the tyre to which the valve and valve cap be fitted.**
- 2 An inflatable tyre valve dust cap as claimed in Claim 1 wherein the numerical display indicating the air pressure would be positioned on the top or on the side or on both surfaces.**
- 3 An inflatable tyre valve dust cap as claimed in Claim 1 or Claim 2, wherein the number may be but is not limited to be, embossed, stamped, punched, engraved, flush, raised, inlaid, in relief, sunken, screen printed, or imprinted, moulded, pressed or similar, depending upon the method of manufacture of the valve dust cap.**
- 4 An inflatable tyre valve dust cap as claimed in Claim 1, Claim 2 or Claim 3, wherein the number may be made more legible by being in a different colour.**
- 5 An inflatable tyre valve dust cap as claimed in Claim 1, Claim 2, Claim 3 or Claim 4, wherein the number on the side may be used to provide the grip required to fit the cap to the valve.**
- 6 An inflatable tyre valve dust cap as claimed in Claim 1, Claim 2, Claim 3, Claim 4 or Claim 5, wherein the top of the cap contains or has positioned the number or any part of the number and could be used to provide the means to depress the air release mechanism of the valve.**
- 7 An inflatable tyre valve dust cap as claimed in Claim 1, Claim 2, Claim 3, Claim 4, Claim 5, or Claim 6, wherein a marking could be used to identify which axle the cap belongs to, which could but is not restricted to 'F' for the front axle and 'R' for the rear axle or similar if the vehicle has more than two axles for example an articulated lorry and trailer.**
- 8 An inflatable tyre valve dust cap as claimed in Claim 1, Claim 2, Claim 3, Claim 4, Claim 5, Claim 6, or Claim 7, wherein, but is not restricted to, a marking or any part of a marking used to identify which axle the cap belongs to, or a marking or symbol providing the manufacturers name, or any other information, which could be used to provide the means to depress the air release mechanism of the valve.**

9 An inflatable tyre valve dust cap as claimed in Claim 1, Claim 2, Claim 3, Claim 4, Claim 5, Claim 6, Claim 7 or Claim 8 that could be used on any vehicle requiring an inflatable tyre including but not limited to, a bicycle, motorbike, car, taxi, van, lorry, tractor, earthmover, off road vehicle or aeroplane.

10 An inflatable tyre valve dust cap substantially as described herein with reference to any of Figures 1-3 of the accompanying drawings.

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Patents Act 1977
Examiner's report to the Comptroller under Section 17
(The Search report)

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Relevant Technical Fields

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(ii) Int Cl (Ed.6) F16K 27/12; B60C 23/00, 29/06

Search Examiner
R L WILLIAMS

Date of completion of Search
14 MARCH 1995

Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) WPI

Documents considered relevant following a search in respect of Claims :-
1-10

Categories of documents

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| <p>X: Document indicating lack of novelty or of inventive step.</p> <p>Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.</p> <p>A: Document indicating technological background and/or state of the art.</p> | <p>P: Document published on or after the declared priority date but before the filing date of the present application.</p> <p>E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.</p> <p>&: Member of the same patent family; corresponding document.</p> |
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Category	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2218493 A (G FENTON)	1-4 and 7
X	GB 2077395 A (METRO PRODUCTS)	1-4 and 7
X	GB 1511831 (J E WITT)	1-4 and 7

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).